Portable Hearing Instrument Fitting System

RM500SL™

Real Control & Portable Verification

audioscan®
Hearing Instrument Fitting Systems
www.audioscan.com

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Real Control & Portable Verification

The RM500SL delivers real control and portable verification. Now you can provide Audioscan quality patient care wherever it's needed! The RM500SL is used most often by educational audiologists, outreach programs, and users with satellite offices.

Take Control.

Control is everything

You simply cannot rely on the hearing instrument itself or on patient comments to ensure you have complete control over fitting a hearing instrument properly. Neither method is sufficient for a quality outcome.

Take control — fit with facts

Objective measurement is essential for your management of hearing instrument fitting and the care of your patient. It is the key to patient satisfaction and the success of the patient's rehabilitation. With it, you control the outcome. Without it, you don't.

Audioscan gives you control

Audioscan systems for real ear measurement, instrument verification, and its Speechmap® fitting environment provide the objective measurement you need to control the outcome for your patients. It is the best foundation for basing your professional guidance, and supervision. It also is the best path to fewer returned products, better productivity, and better overall patient satisfaction — giving you peace of mind.

Verification Myths

"Hearing instruments fit themselves"

"First fit" is a shot in the dark. Multiple studies have shown wide variability and ineffectiveness of first fit results. Indeed a recent report showed that 66% of hearing instruments are fit incorrectly.[1] As medical devices, hearing instruments should not be relied upon to fit themselves.

[1]Consumer Reports, Hear well in a noisy world, July 2009

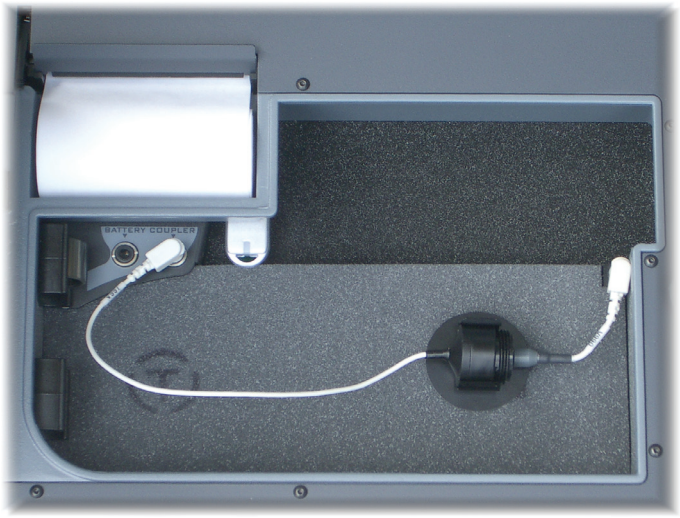
Benefits.

Speechmap® — the first, and the best.

This unique fitting environment is the scientific choice. Using Speechmap, you quickly measure the output of the hearing instrument at the tympanic membrane using the stimulus hearing instruments are designed to process — speech! This elegant process ensures accuracy and validity through solid science that has been pioneered and advanced by Audioscan since 1992.

FM verification leader

The RM500SL is *the* choice for educational audiology. School systems across the world rely on the RM500SL for FM verification on-the-go.



FM systems easily fit in the large test box

Verification Myths

"This hearing instrument is too magic to measure!"
Just remember O-E-S We measure the OUTPUT of the hearing instrument, at the EARDRUM, using SPEECH — the signal all hearing instruments are designed to process. Measuring in this way means that regardless of advanced digital processing or open/closed style, your results are correct.

Verification Myths

"It takes too long..."
Verification saves you time and money! Recent evidence has shown that verification and validation will reduce the number of visits per patient by 32%![2] Further, using today's equipment you can perform all necessary tests in only a few minutes.

It goes where you go

RM500SL is designed to be portable and robust. Its cast aluminum construction and close-and-go design mean you can rely on trouble free use for years to come.

Compatible with today's hearing instruments

RM500SL can verify analog/digital, occluded/open, and even frequency shifting instruments! The RM500SL is ideal for use with every patient regardless of the hearing instrument technology employed.

Secure, stable and completely maintained

Unlike PC-based systems, Audioscan products utilize proprietary hardware and software architecture to better serve audiology functions. You'll never get a virus, and never worry about compatibility. Self-contained, our products are impervious to the rapid obsolscence of PC hardware and operating systems — and since our software updates are free you're always on the cutting edge of fitting technology.

Easy data management

Manage patient data your way.

- NOAH compatible
- Print to internal or external printer
- Store or restore sessions from a shared network folder or USB thumb drive
- Capture any RM500SL screen from any networked PC with an internet browser.
- Use the optional barcode scanner to store and retrieve audiometric data.

[2]Sergei Kochkin, Hearing Review 20120;17[4]:12; 2011;18[6]:10

Comprehensive Support.

We're listening
Audioscan customers have long recognized our expertise in objective verification. They also know that when they have a question, we're ready to listen. When you purchase any Audioscan system, we offer you free telephone support that will connect you to a real expert ready to address your question.

Extensive warranty, low cost of ownership
Enjoy the peace of mind that comes with our 2-year warranty, and the knowledge that we support our equipment for the long haul. Once your RM500SL is out of warranty we provide genuine Audioscan parts at a fraction of the cost of other manufacturers.

Free software means real value
Free software updates mean you're always up-to-date with the latest in hearing instrument fitting technology at no cost to you.

Options/Consumables

NOAH® module
Our all-new module allows quick transfer of data between your Audioscan and NOAH. Comparison between current and older test results is easy when you store, view, and print your Audioscan screens inside the NOAH database. This popular option removes needless double-entry of audiograms and makes the paperless office a reality!

Probe tubes and paper
Genuine Audioscan probe tubes help to ensure the accuracy and validity of your measurements. Contact Audioscan directly for supplies including printer paper!

Barcode scanner for easy data re-entry
If you choose to print your results, you can include a unique barcode that will allow you to scan in audiometric data upon the patient's return.

Battery pills for measurement of battery drain

supplies@audioscan.com
USA 800-265-2093 — INT 001-519-268-3313

We're number one!

Take control with the number one manufacturer
The founders of Audioscan pioneered the first digital hearing instruments, so we're uniquely qualified to measure them. Audioscan has been making quality fitting systems for more than two decades, introducing speech measurements, and many other innovations along the way. With more fitting systems in use in North America than all other suppliers combined[3], Audioscan's experience and expertise is unparalleled.

www.audioscan.com

Visit rm500sldemo.audioscan.com to sign up for a free demonstration.

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[3]Paramount blind survey conducted in 2011

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Which one is right for you?

Software Features

		Verifit®	Axiom®	RM500SL™
Speechmap®	World's First	■	■	■
Real Speech (Calibrated)	World's First	■	■	■
Simultaneous Directional REM Test	World's Only	Optional		
Simultaneous Directional HIT Test	World's Only	■		
Dedicated Noise Reduction Test	World's First	■		■
Feedback Suppression Test	World's First	■		
Frequency Lowering Test	World's First	■	■	■
CROS/BiCROS Fitting Capability		■		
Speechmap® for Telecoil Programming	World's Only	■		
User-Supplied Sound Files		■	■	■
Sensory Loss Simulator™	World's Only	■	■	■
FM Fitting Protocol		■	■	■
DSL®5		■	■	■
NAL-NL2		■	■	■
NOAH® Module	NEW!	Optional	Optional	Optional

Hardware Features

12.1" Color Integrated Display	World's Only	■		■
Dual Probes	World's First	■	■	
Telephone Magnetic Field Simulator		■		■
Integrated Carrying Case				■
Integrated Battery Drain		■		Optional
Wired Network Ready		■	■	■
Wireless Networking	NEW![1]		Optional	
Test Box (Integrated)		■	■	■
Barcoded Audiometric Data Entry	World's Only	Optional	Optional	Optional
RECD Transducer		■	■	■
Integrated Probe Monitor		■		
ANSI S3.22-2003		■	■	■
Multiple Display Capability		■	■	
External Speaker Capability		■	■	
Internal Printer		■		■

[1]New feature will become available 2013

Support

Knowledgeable Distributor in Every State		■	■	■
Free Live Phone Support		■	■	■
Comprehensive Help Files		■	■	■
All System Software Updates Free	Industry Only	■	■	■
2 Year Warranty	Industry First	■	■	■

RM500SL™

Specifications

All-new NOAH® module available!

Storage & Transportation

Temperature.....-20ºC to +60ºC
Relative humidity (non-condensing).....5% to 95%
Atmospheric pressure.....500-1060 hPa

General

Overall dimensions.....15.5"x12.75"x4.25"
Weight.....16.4 lbs (7.5kg)
Power source:.....100-240V, 50-60Hz, 250 VA
Fuse.....2A type T, 250V
Display type.....fluorescent backlit active color
Display size.....12.1" diagonal
Internal printer.....3" (80mm) Thermal line printer, 200 dots/inch
Power amplifiers.....2
Stimulus channels.....2
Measurement channels.....1
Connectors.....1-USB
.....1 - Ethernet (RJ45)
.....1 - RS232 serial (9D)
..... 2 - auxiliary audio outputs (1/4"mono)
.....1- RECD transducer(3.5mm st)
.....1 - test chamber ref. mic.(3.5mm st)
.....1 - coupler microphone(3.5mm st)
.....1 - battery substitute(3.5mm st)
.....1 - real-ear mic.(3.5mm st)

Test Box

Working Space.....8.8"x3.5"x1.5"
Test Box Isolation @ 1kHz: .....>25 dB
Speaker.....1 - 2"x3"
Induction Coils.....1 - Telephone Magnetic Field Simulator (TFMS ANSI S3.22 - 2003)
Battery Simulator.....per ANSI S3.22 2003
Frequency Range.....200 - 8000 Hz
Coupler microphone noise floor .....(200 – 8000 Hz): <40 dB SPL
Test Stimuli.....tone, tone burst, pink noise, user supplied, calibrated or live speech, ISTS, filtered speech for verifying frequency-lowering instruments
Test stimulus levels.....40 to 90 dB SPL in 5 dB steps
Test stimulus levels (inductive).....31.6mA/m per ANSI S3.22 - 2003
Test stimulus distortion
.....<2% at 90dB SPL
.....<0.5% at 70 dB SPL
Test stimulus accuracy at reference mic. for tones (200-2000 Hz).....+/- 1.5 dB SPL
Test stimulus accuracy at reference mic. for tones (2000-8000 Hz).....+/- 2.5 dB SPL
Equalization method...real time modified pressure method (stored for open fittings)
Analysis frequencies per octave.....12
Analysis filter bandwidth.....1/12 octave
Measurement accuracy at 1 kHz.....+/- 1dB
Measurement accuracy re 1 kHz
.....+/- 1 dB (200-5000 Hz)
.....+/- 2.5 dB (5000-8000 Hz)
Measurement range.....30 - 140 dB SPL
Harmonic distortion measurement.....2nd and 3rd or 2nd plus 3rd
Harmonic distortion range.....200 to 4000 Hz
Harmonic distortion accuracy.....+/- 1%
Battery drain range.....0 - 20mA
Battery drain accuracy.....+/- 5%
Battery drain resolution.....+/- .01 mA

ANSI S3.22 - 1996 and 2003 tests available

OSPL90.....Full-on Gain.....Reference Test Gain.....Frequency Response.....Frequency Range.....Maximum OSPL90.....Harmonic Distortion.....Attack & Release time.....Equivalent Input Noise.....Input/Output Curves.....Coupler SPL - Telephone Simulator.....Simulated Telecoil Sensitivity.....Battery Drain

Other tests Available

Speechmap®.....Coupler SPL vs freq.....Coupler gain vs freq.....Spectral analysis.....Distortion vs freq.....Manual measurement of output, gain and distortion

On-Ear

Speakers.....1 - 2"x 3"
Probe microphone tube.....Silicone 1.0 mm diameter x 75 mm
Probe microphone noise floor.....(200 – 8000 Hz): <45 dB SPL
Frequency Range.....200 to 8000 Hz
Test Stimuli.....tone, tone burst, pink noise, user supplied, calibrated or live speech, ISTS, filtered speech for verifying frequency-lowering instruments
Freq. modulation.....sawtooth +/- 3% over 128 ms
Test stimulus levels for tones.....40 - 85 dB SPL in 5 dB steps
Test stimulus accuracy at reference mic. for tones (200 - 2000Hz).....+/- 1.5 dB SPL
Test stimulus accuracy at reference mic. for tones (2000- 8000 Hz).....+/- 2.5 dB SPL
Equalization Method.....pressure method (stored for open fittings)
Frequencies per octave (swept tones).....12
Frequencies per octave (tone burst).....3
Analysis bandwidth (speech, noise).....1/3 octave
Measurement accuracy at 1 kHz.....+/- 1 dB
Measurement accuracy re 1 kHz
.....+/- 1 dB (200-5000 Hz)
.....+/- 2.5 dB (5000-8000Hz)
Battery drain resolution.....+/- .01 mA
Measurement Range
.....20-135 dB SPL (200-2500 Hz)
.....30-140 dB SPL (2500-8000Hz)

ANSI S3.46 - 1997 tests available

Real-Ear Unaided Response.....Real-Ear Aided Response.....Real-Ear Occluded Response.....Real-Ear Insertion Gain

Other tests available

Speechmap® real-speech audibility measures.....On-ear harmonic distortion.....On-ear spectral analysis.....Manual measurement of output, gain, and distortion

Fitting methods available

Speechmap® with DSL 5.0a, NAL-NL1, NAL-NL2, CAMFIT
Insertion gain with NAL-RP, NAL-NL1, Fig6, PogoII, Berger, Libby

Sensory Loss Simulator

Simulation types.....Linear, conductive
.....Non-linear outer hair cell cochlear loss
Simulation bands.....65

Specifications subject to change without notice

CE ISO 13485

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Hearing Instrument Fitting Systems

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